A NEW *HYPSIGLENA* FROM TIBURON ISLAND, SONORA, MEXICO

Wilmer W. Tanner[1]

Abstract.— *Hypsiglena torquata tiburonensis* is described as new to science from Isla del Tiburon, Sonora, Mexico. Notes pertaining to other taxa in the genus are included.

The islands in the Gulf of California continue to produce interesting variations in the genus *Hypsiglena*. Few islands are without representatives of the genus and all island populations show some variations not found in Baja California or Sonora populations. Those islands furthest from the coast and off the coastal shelf, such as Tortuga and Santa Catalina, show the most variation, an indication of their longer isolation.

A most unusual pair of specimens is available from the island of Tiburon. They are unusual in their color pattern and particularly in the large number of dorsal spots. As noted above, it is not unexpected for island populations to be differentiated from the mainland populations, but, considering the short distance from costal Sonora to Tiburon, one would not expect such a radical departure in pattern. Because the population is distinct, I choose to name it—

Hypsiglena torquata tiburonensis, n. subsp.
Fig. 1

Holotype.— An adult female, BYU 33181, taken by James R. Dixon, on Isla del Tiburon, Sonora, Mexico, 14 August 1974.

Paratype.— An adult female, MVZ 37802, taken by C. G. Sibley at Ensenada del Perro, Isla del Tiburon, 10 November 1941.

Diagnosis.— A subspecies of *Hypsiglena torquata* characterized by light brown spots, which are narrowly separated from one another (usually less than one scale) and involving 7–9 dorsal scale rows. There is a strong tendency for the dorsal spots to be separated or only narrowly connected at the dorsal midline. In the holotype, the nape pattern is similar to *deserticola*, but in the paratype it is as in northern Sonora and Arizona specimens. The subspecies *tiburonensis* is most closely related to those nearby populations in Sonora and Arizona and in the Great Basin, but it is distinct in the number, size, and shape of the dorsal spots.

Description.— Rostral broad, rounded, and projecting anteriorly 0.7 mm, 17.5 percent of distance to anterior edge of frontal; loreals 1-1; preoculars 2-2; temporals 1-2; supralabials 8-8; infralabials 10-10, four rows of gulars between posterior chinshields and first ventral; ventrals 185; caudals 52; anal divided; dorsal scales in 21-21-15 longitudinal rows.

Nape pattern of three dark blotches, the median one of these with three parts, the anterior median portion narrow, extending from the parietal posteriorly 5 scales to fuse on each side with the lateral portions of this spot; lateral nape spots separated from median and extending anteriorly to orbit; dorsal blotches on body 86, many divided or narrowly connected medially, spots separated by narrow pale cross-bands usually one-half scale wide, dorsal spots when united forming a band across dorsum involving 7–9 scale rows. Dorsum of head without dark spots; body color a light brown with narrow, cream-colored mottling separating the spots.

Measurements.— Snout-vent length 376 mm; tail length 68 mm; tail 15.3 percent of total length; head length, from snout to posterior edge of parietals 11.4 mm; head width 10.5 mm; diameter of eye 2.1 mm.

Remarks.— The size, shape, and number of dorsal body spots is the most distinctive character in *tiburonensis*. There are other sub-

[1]Life Science Museum, Brigham Young University, Provo, Utah 84602.

species with dorsal spots that extend across the dorsum to occupy 7–9 rows of scales (*t. torquata, t. nuchulata, t. baueri*), and perhaps occasional specimens in other subspecies, but in these the spots are longer; that is, they involve 2–3 or more scale lengths. In *tiburonensis* the dorsal spots are less than 2 scales and usually 1½. The pale bands between the dorsal spots are narrow, less than one scale length; thus, the narrow spots and interspaces provide space for more spots, characteristic of this subspecies. In *t. venusta* there are large numbers of dorsal spots (69–95); however, they are small, divided middorsally to form two rows that extend for most or all the body length and involve only 2–3 rows of scales. Furthermore, they are, as in *tiburonensis*, narrowly divided by lighter crossbands between the spots (Tanner 1944 [1946]). Although the nape pattern is similar to that of *deserticola*, it does have its own uniqueness and appears to consist basically of three narrowly fused spots.

A series of 10 females from Sonora provides little scutellation variation between them and *tiburonensis*, with ventral means 183.3 to 182.5, respectively. The caudals are also close, with means of 55 to 52, respectively (the paratype is missing its tail tip). The greatest variation between Sonora and Tiberon specimens occur in the number of dorsal body spots, with females having 59.1 to 77.5, respectively.

It should be noted again that the series from Sonora includes both those specimens showing a pale nape band (typical *torquata*), and those representing the northern type (*ochrorhynchus*), all of which are without any

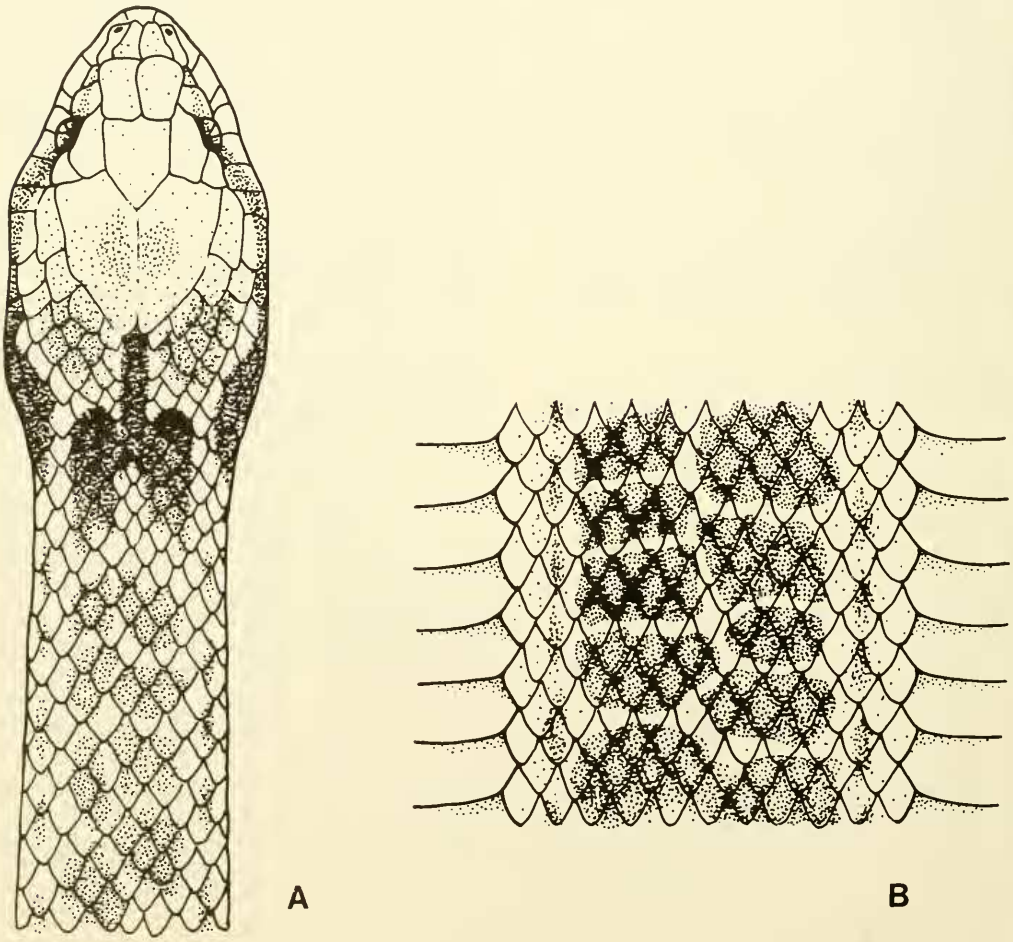

Fig. 1. *Hypsiglena torquata tortugaensis*, BYU 33181, holotype: A, head and nape patterns; B, dorsal spots.

remnant of the white band. In the *torquata* dorsal body pattern, the pale areas that divide the dark dorsal spots are narrow, as in *tiburonensis,* but otherwise the pattern is very different with fewer, larger, and broader spots. In the specimens from northern Sonora and most of adjoining Arizona, northwestern Chihuahua, and extreme south-central Utah, the light areas between the spots are wider, covering one or more scales. The nape pattern in the northern populations is usually a fusion of the spots to form an irregular dark brown band that laterally extends anteriorly to the orbits; or the nape pattern may have a central elongate spot extending posteriorly from the parietals for approximately 7–10 scales and, at its widest, 3–4 scales wide. In some specimens the median spot is fused on one side with a lateral nape spot. In all specimens examined, the lateral spots extend to the orbit.

Based on color pattern, the relationship of *tiburonensis* is closer to those populations in northwestern Sonora and those further to the north, including *deserticola* (which has a similar nape pattern). There is also a general lightening of the brown color and a strong tendency for scales in the dorsal blotches to be edged with dark, its centers being a lighter brown. This lightening seems to be true for desert populations, but a darker brown is present in most areas where an increase of moisture occurs. Three specimens from San Esteban Island (CAS-SU-9038, UM 128641, and MVZ 74953) are similar to *tiburonensis* in having numerous dorsal body spots, 90, 78, and 82, respectively. Other characters are also similar, such as ventrals, ♀ 184–186, and caudals, 46–52; one male has 173 ventrals and 55 caudals. The similarities between these two island populations dictate that they should be included in the same taxon, at least until larger series from each island warrant a separation.

An examination of specimens from adjoining Sonora showed little similarity in color pattern. As noted above, the nape pattern was similar to *t. deserticola* and the scale patterns were almost identical to the Sonora and Arizona specimens. An examination of the Sonoran specimens available to me shows as great a color pattern variation as in any other geographical area, except perhaps Baja California. It is in Sonora that the light, cream-colored nape band disappears and the dark nape pattern becomes an irregular band or three nape spots. An occasional specimen from southeastern Sonora and adjoining southwestern Chihuahua has a much broader, more uniform dark band.

It was from this general area and on the basis of comparisons with more southern populations that Dunn (1936) synonomised *ochrorhyncha* with *torquata,* this in spite of the very few specimens available and in contrast to the Stejneger and Barbour (1917) assignment. Both Tanner (1946) and Dixon (1965 and 1967) accepted *ochrorhyncha* based on the distinct color pattern of limited specimens available between typical specimens of the two types. With a substantial increase in the numbers of specimens throughout the entire range of *Hypsiglena,* it is now generally agreed that only one widespread species (*torquata*) is assignable to the genus *Hypsiglena* (Tanner 1954, 1958, 1960, 1962, 1963, 1960, 1966, Schmidt 1953, Bogert and Oliver 1945, Zweifel and Norris 1955, Smith and VanGelder 1955, Duellman 1957, Fugler and Dixon 1961, Fouquette and Rossman 1963, Hardy and McDiarmid 1969).

Dixon and Lieb (1972) described as a new species *Hypsiglena tanzeri.* Based on the description, figures, and my examination of the paratype (LACM 72068), it appears to be a color variation of *torquata* and should thus be considered a unique subspecies of *torquata.* An examination of *t. tanzeri* places it as one color pattern extreme in the large size and small number of body spots; *t. venusta* is the other extreme. In *Hypsiglena,* the size, shape, and number (now known to range from 37–95) of body spots and the nape pattern are highly variable. This character alone, I believe, does not warrant species status for *tanzeri.* This wide range of color pattern variation I consider particularly characteristic in *Hypsiglena.* Tanner, Dixon, and Harris (1972) found in *Crotalus lepidus* an extreme color pattern modification in which the dark body bands were reduced in *l. maculous* to dorsal spots, the smaller cross bands appearing on the posterior third of the body. This same pattern occurs in *t. tanzeri,* with the more typical spots occurring posteriorly. Such extensive color pattern variations have also

been found to occur in such species as *Sonora semiannulata* and *Lampropeltis getulus*.

Hypsiglena specimens are available to me from the following Gulf of California islands: Angel de La Guarda, Danzante, Partida (Norte), Partida (Sur), Mejiia, Santa Catalina, San Francisco, San Esteban, San Jose, Monserrate, San Lorenzo, San Marcos, Tiburon, and Tortuga. On each of those islands *Uta* is abundant, and on most *Cnemidophorus* is present. Small lizards, particularly *Uta*, are the food sources for *Hypsiglena*. This predator-prey relationship is widespread in western North America and is particularly so on these islands. This predator-prey relationshp occurs on the islands of Cedros and San Martin on the Pacific side of the Baja Peninsula and most likely occurs on all islands of the area. It is suspected, therefore, that if *Uta* is present, *Hypsiglena* will also be there.

Acknowledgments

Several individuals have aided in providing materials for this study. I am grateful to Dr. Alan Levitan (CAS), Dr. Robert Stebbins (MUZ), and Dr. Arnold Kluge (UM) for the loan of specimens and to John Ottley and his companions for the considerable field work done in Mexico during the past decade.

Literature Cited

BOGERT, C. M., AND J. A. OLIVER. 1945. A preliminary analysis of the herpetofauna of Sonora. Bull. Amer. Mus. Nat. Hist. 83:301–425 (March 30).

DIXON, J. R. 1965. A taxonomic reevaluation of the night snake *Hypsiglena ochrorhyncha* and relatives. Southwestern Nat. 10:125–31 (April 30).

———. 1967. Amphibians and reptiles of Los Angeles County, California. Los Angeles County Museum of Nat. Hist., Science Series 23, Zoology No. 10, May 1967.

DIXON, J. R., AND C. S. LIEB. 1972. A new night snake from Mexico (Serpentes: Colubridae). Contributions in Science, No. 222. Nat. Hist. Mus. L.A. County.

DUELLMAN, W. E. 1957. Notes on snakes from the Mexican state of Sinaloa. Herpetologica 13:237–40 (October 31).

DUNN, E. R. 1936. Notes on N. Am. Leptodeira. Proc. Nat. Acad. Sci. 22:691–95.

FOUQUETTE, M. J., JR., AND D. A. ROSSMAN. 1963. Noteworthy records of Mexican amphibians and reptiles in the Florida State Museum and the Texas Natural History Collection. Herpetologica 19:185–201 (September 11).

FUGLER, C. M., AND J. R. DIXON. 1961. Notes on the herpetofauna of the El Dorado area of Sinaloa, Mexico. Michigan State University, Mus. Publ. 2:1–24 (July 20).

HARDY, L. M., AND R. W. MCDIARMID. 1969. The amphibians and reptiles of Sinaloa, Mexico. University of Kansas. 18(3):39–252, pls. 1–8 (91 figs).

SCHMIDT, K. P. 1953. A check list of North American amphibians and reptiles. American Soc. Ichthyologists and Herpetologists. 6th ed.

SMITH, H. M., AND R. G. VANGELDER. 1955. New and noteworthy amphibians and reptiles from Sinaloa and Puebla, Mexico. Herpetologica 11. 145–49 (July 15).

STEJNEGER, L. H., AND T. BARBOUR. 1917. A check list of North American amphibians and reptiles. 2d ed. Harvard University Press, Cambridge.

TANNER, W. W. 1944 (1946). A taxonomic study of the genus *Hypsiglena*. Great Basin Nat. 5:25–92 (December 29).

———. 1954. Additional notes on the genus *Hypsiglena* with a description of a new subspecies. Herpetologica 10:54–56.

———. 1958. Herpetology of Glen Canyon of the Upper Colorado River Basin. Herpetologica 14:193–195.

———. 1962. Description of a new *Hypsiglena* from San Martin Island, Mexico, with a resume of the reptile fauna of the Island. Herpetologica 18:21–25.

———. 1966. The night snakes of Baja California. Transactions of the San Diego Soc. of Nat. Hist. 14(15):189–196.

TANNER, W. W., J. R. DIXON, AND H. S. HARRIS, JR. 1972. A new subspecies of *Crotalus lepidus* from western Mexico. Great Basin Nat. 32:16–24.

TANNER, W. W., AND C. D. JORGENSEN. 1963. Reptiles of the Nevada Test Site. Brigham Young University Sci. Bull. Biol. Ser. 3(2):1–35.

TANNER, W. W., AND W. G. ROBISON. 1960. Herpetological notes for northwestern Jalisco, Mexico. Herpetologica 16:59–62.

ZWEIFEL, R. G., AND K. S. NORRIS. 1955. Contribution to the herpetology of Sonora, Mexico: descriptions of new subspecies of snakes (*Micruroides euryxanthus* and *Lampropeltis getulus*) and miscellaneous collecting notes. Amer. Midl. Nat. 54:230–49 (July).